

Spaceport News

John F. Kennedy Space Center - America's gateway to the universe



Radiation Belt Storm Probes begin two-year mission

Early morning liftoff a major success for Launch Service Program

*By Anna Heiney
Spaceport News*

NASA's Radiation Belt Storm Probes (RBSP) are bound for the heart of the Earth's radiation belts after an early-morning launch from Cape Canaveral Air Force Station on Aug. 30. The United Launch Alliance Atlas V rocket carrying the twin probes lifted off from Space Launch Complex-41 at 4:05 a.m. EDT.

The Van Allen radiation belts are two concentric, wide rings of high-intensity particles encircling the Earth's equator. This dynamic region changes in response to the sun, with the potential to affect GPS satellites, satellite television and more. The RBSP mission aims to study this ever-changing environment in greater detail than ever before.

The RBSP mission is part of NASA's Living with a Star program, which is managed by the agency's Goddard Space Flight Center in Greenbelt, Md. The Applied Physics Laboratory team built the RBSP spacecraft and will manage the mission for NASA.

The discovery of the radiation belts dates back to the dawn of the space age. Their existence was detected in 1958 by a Geiger counter on NASA's first spacecraft, Explorer 1, built by James Van Allen and his

team from the University of Iowa.

The mission uses two probes so scientists can distinguish transient features from those that are there for a longer period, or may be changing, Fox said.

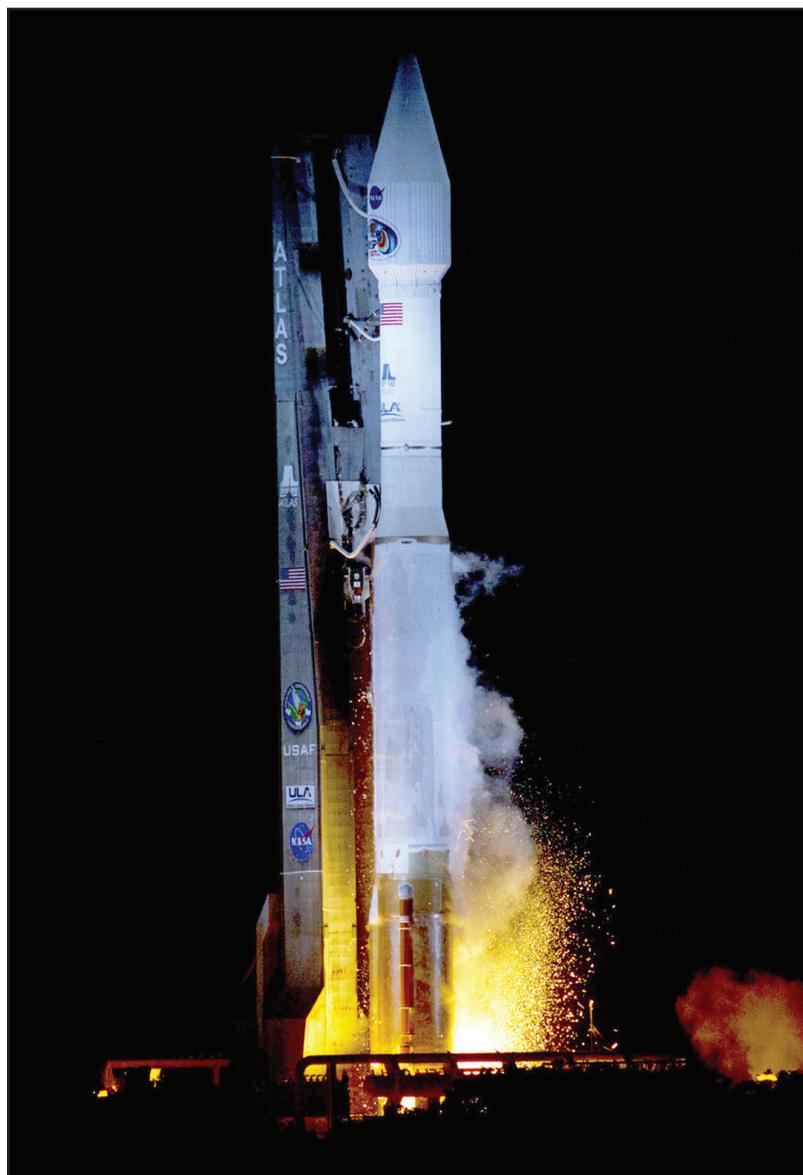
Based at Kennedy Space Center, the Launch Services Program (LSP) was involved in prelaunch planning for the RBSP mission for several years.

NASA Launch Manager Tim Dunn said, "The team has been preparing in total for about six years for the RBSP mission. The early planning began that long ago, back in about the 2006 timeframe. The core team came in at about contract award time in March of 2009. So we've been very heavily involved with RBSP for the last three years."

Rex Engelhardt, LSP's mission manager for RBSP, worked on the project since 2006. He pointed out that ensuring the separation of both spacecraft from the Centaur upper stage, after launch, required some extra attention.

"You've got to point it in the right direction, spin it back up again, separate the second (probe), then you've got to spin the Centaur back down again, and quietly back away," Engelhardt said.

Now that the probes are flying in their proper orbits, they'll undergo a two-month "commissioning period." This offers the team plenty of time to extend the instrumentation booms, check out the probes' health and safety, and ensure the electronics are working.



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NASA/Rusty Backer

The United Launch Alliance Atlas V rocket carrying NASA's Radiation Belt Storm Probes, or RBSP, lifts off Space Launch Complex-41 on Cape Canaveral Air Force Station in Florida at 4:05 a.m. EDT on Aug. 30.

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Workers praise Armstrong as an American hero

By Bob Granath
Spaceport News

Employees at NASA's Kennedy Space Center paused recently to remember Neil Armstrong, the first human to walk on the moon and one of America's greatest heroes of exploration. Armstrong died Aug. 25 at the age of 82.

During a brief wreath-laying ceremony on Aug. 31, Bob Cabana, Kennedy's center director, described Armstrong as a role model.

"Neil Armstrong was a true American hero, and one of the nicest gentlemen around," he said. "He was the epitome of what an engineering test pilot should be."

Cabana added that Armstrong was greatly interested in Kennedy's path forward to the future.

"Neil's one small step for man was the culmination of a lot of hard work by a lot of people down on the ground," he said. "His step was only the beginning of a very long journey that we must now continue as we prepare to move even further from our home planet and continue this quest in our exploration of space."

Armstrong's family shared the news of his passing following complications from recent cardiovascular procedures:

"Neil was our loving husband, father, grandfather, brother and friend," the family statement read. "Neil Armstrong was also a reluctant American hero who always believed he was just doing his job."

Tributes honoring Armstrong have been numerous.

"Neil was among the greatest of American heroes - not just of his time, but of all time," President Barack Obama said in a statement released by the White House. "When he and his fellow crew members lifted off



CLICK ON PHOTO

Kennedy Space Center Director Bob Cabana addresses employees and guests gathered for a brief ceremony on Aug. 31 to honor Neil Armstrong, who died Aug. 25 at the age of 82. Armstrong was hailed by Cabana as one of our heroes and a truly great American.

NASA/Kim Shifflett

aboard Apollo 11 in 1969, they carried with them the aspirations of an entire nation . . . they set out to show the world that the American spirit can see beyond what seems unimaginable - that with enough drive and ingenuity, anything is possible."

NASA Administrator Charles Bolden, like Cabana a former astronaut, also reacted to the loss of a fellow former astronaut.

"Besides being one of America's greatest explorers, Neil carried himself with a grace and humility that was an example to us all," Bolden said.

Fellow Apollo 11 moon-walker Buzz Aldrin also honored Armstrong's flying skills.

"I know I am joined by millions of others in mourning the passing of a true American hero and the best pilot I ever knew," he said.

Armstrong was born Aug. 5, 1930, on his grandfather's farm near Wapakoneta, Ohio. His passion for flying began at an early age. He moved from building model airplanes to taking flying

lessons at 15. While most American teenagers look forward to receiving a driver's license, Armstrong earned his pilot's license before he could drive a car.

Putting his college work aside, Armstrong was a naval aviator from 1949 to 1952, flying 78 combat missions during the Korean conflict. After leaving active duty, he continued serving in the U.S. Naval Reserve until 1960.

Armstrong completed his work at Purdue University in 1955 earning a bachelor's degree in aeronautical engineering. That same year he joined the National Advisory Committee for Aeronautics, or NACA, NASA's predecessor organization, as a research pilot at Lewis Laboratory in Cleveland.

He later transferred to NACA's High Speed Flight Research Station at Edwards Air Force Base, Calif. As project pilot, he was in the forefront of the development of many high-speed aircraft, which included flying the X-15 to the edge of space seven times.

In September 1962,

Armstrong was offered an opportunity to join NASA's expanding astronaut corps which he accepted without hesitation.

On his first spaceflight, Armstrong was command pilot for Gemini 8 in March 1966. He and David Scott successfully performed the first spacecraft docking in orbit, linking their Gemini capsule with an Agena target satellite, a crucial step in preparing for future trips to the moon.

After serving as backup commander to Frank Borman for the first Apollo flight to leave Earth orbit and circle the moon in 1968, Armstrong was selected to command Apollo 11, the first lunar landing mission.

With much of Earth's population watching, Armstrong, along with lunar module pilot Aldrin and command module pilot Mike Collins, lifted off from Kennedy on July 16, 1969.

"Neil and I trained together as technical partners, but were also good friends who will always be connected through our participation in

the Apollo 11 mission," Aldrin recently said. "Virtually the entire world took that memorable journey with us."

"When you have hundreds of thousands of people all doing their job a little better than they have to, you get an improvement in performance," Armstrong said in a NASA oral history interview in 2001. "And that's the only reason we could have pulled this whole thing off."

Looking to the future, Bolden noted that Armstrong helped pave the way.

"As we enter this next era of space exploration, we do so standing on the shoulders of Neil Armstrong," he said.

While tributes for Armstrong arrived from all areas of the world, his family had a suggestion.

"For those who may ask what they can do to honor Neil, we have a simple request. Honor his example of service, accomplishment and modesty, and the next time you walk outside on a clear night and see the moon smiling down at you, think of Neil Armstrong and give him a wink."

Atlantis' new home at visitor complex topped out

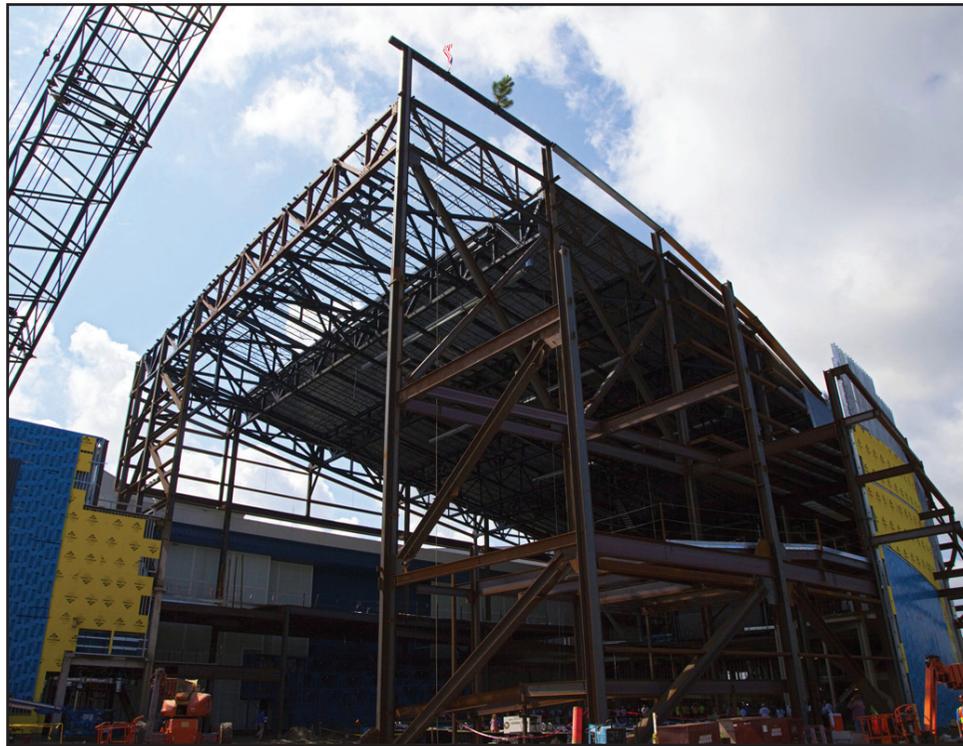
By Steven Sicheloff
Spaceport News

The new home for space shuttle Atlantis was topped out Wednesday with its highest beam in a milestone ceremony marking the continuing construction of a 90,000-square-foot exhibit hall at the Kennedy Space Center Visitor Complex.

"Topping out of a building is always a special occasion," said Bob Cabana, director of NASA's Kennedy Space Center and a former space shuttle commander. "I remember when Joe Tanner was doing a spacewalk and he topped off the International Space Station, the highest point on it, and he had brought a facsimile of a tree on it."

The 38-foot-long, one-ton steel beam was lifted 116 feet off the ground where workers locked it into place. A small tree and American flag were fitted onto the beam, which was signed by hundreds of contractor and NASA employees.

Roy Tharpe added his signature at the last moment, continuing a tradition he began in the early 1960s when he signed the top beam of



CLICK ON PHOTO

A steel beam is fitted to the highest point of a new exhibit facility under construction at the Kennedy Space Center Visitor Complex on Sept. 5. The 90,000-square-foot facility will house space shuttle Atlantis and 62 shuttle program exhibits.

NASA/Kim Shifflett

the Vehicle Assembly Building.

"I just thought it was important that I show my respect for the space program and the accomplishments we've made," Tharpe said. "I'm getting old, but this work never gets old."

Construction is far from complete on the structure. Now mostly a framework

of steel beams, workers will enclose the space in the next couple of months, careful to leave one wall open so Atlantis can be rolled in and the building finished around it. It will take some 1,400 tons of steel to complete the structure.

The exhibit is being built by Delaware North, which manages and operates the Kennedy Space Center Visitor Complex for NASA. Tim Macy, director of Project Development for the visitor complex, said the exhibit is scheduled to open during the July Fourth weekend in 2013.

Atlantis will be the last shuttle to move out of the operational area at Kennedy. The move will take place Nov. 2, with the shuttle attached to the orbiter transport vehicle, or OTV, that carried the shuttles for years from their processing hangars to the Vehicle Assembly Building.

The OTV will take Atlantis on a 9.8-mile journey from the VAB to

the headquarters building at Kennedy, then across to the developing Exploration Park for a three-hour stop before finishing the trip to the visitor complex's exhibit structure. With the retired orbiter inside, workers will be able to complete the building around the shuttle.

The shuttle will be lifted onto a stand and tilted at 43.21 degrees - that number is intentional - with its payload bay doors open. The shuttle will look as it did in space.

Sixty-two exhibits will be erected around it, including a full-scale mockup of the Hubble Space Telescope and a full-scale model of a portion of the International Space Station.

"The orbiters are special to us, they're family but really this facility is going to tell the story of an amazing 30-year program and this venue is going to be absolutely outstanding," Cabana said. "This is the place to come see our history and this is the place to

come see our future."

The exhibits will tell the shuttle program's history with interactive displays and other features that allow visitors to learn as much as they want about the spacecraft that carried astronauts into space for 30 years.

"Every time you come out of those story zones, you look at Atlantis with different eyes to appreciate what we've accomplished," said Louis Berrios, design specialist for Kennedy. "This has been a project that is just on such an amazing pace you sometimes don't get to take a breather and admire what's been done. It wasn't very long ago this was bare concrete with nothing here."

The work to get the shuttles to their new homes is close to wrapping up. Discovery, the most-flown of the shuttle fleet, has been on display at the Smithsonian's Air and Space Museum for a few months.

Endeavour, the youngest of the shuttles, has been outfitted for its Sept. 17 flight atop a modified 747 Shuttle Carrier Aircraft to Los Angeles where it will be put on display at the California Science Center.

Enterprise, the prototype shuttle that flew glide tests and was used to test all manner of fixtures and techniques before the first shuttle launch, stands on the flight deck of the Intrepid in New York City as a prominent exhibit at the Intrepid Sea, Air and Space Museum.

Eventually, each shuttle will be displayed in a unique configuration. Endeavour will be displayed vertically as it was for launch. Atlantis will reveal to visitors a shuttle as it appeared in orbit. Discovery looks like it just landed.



NASA/Kim Shifflett

A worker signs the steel beam before it was lifted and placed at the top of the exhibit structure being built for space shuttle Atlantis on Sept. 5.

Exploration Park development ready for first phase

By Linda Herridge
Spaceport News

A modern sign now marks the entrance to Exploration Park along Space Commerce Way near the Kennedy Space Center Visitor Complex. Beyond the sign, much of the 60 acres of land has been cleared, roads are paved and most of the necessary infrastructure is in place for the first phase of construction.

The sign also marks the new entranceway to the Space Life Sciences Laboratory (SLSL). Previously, the SLSL entrance was along State Road 3 on NASA's Kennedy Space Center, but the entrance was rerouted in June as part of the development of Exploration Park, according to Mario Busacca, acting manager of Kennedy's Spaceport Planning Office.

"Placing the entrance



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NASA/Dimitri Gerondidakis

A new sign on Space Commerce Way marks the entrance to Exploration Park near Kennedy Space Center Visitor Complex on Aug. 15. Much of the 60 acres of land has been cleared for the first phase of construction.

to the SLSL outside the center's secure perimeter will allow greater access to many users, including foreign nationals," Busacca said. "Being in Exploration Park will allow tenants to reside there without the badging requirements and extensive security reviews."

Busacca said the SLSL, which was built and is owned by the state of

Florida, is the anchor for the park. The building currently is being repurposed to provide for more use by the commercial space community.

Development of the park is a partnership between NASA and Space Florida. NASA granted Space Florida the right to develop the property under an Enhanced Use Lease. Space

Florida also will manage the facilities through subleases to appropriate tenants.

Prior to signing the Enhanced Use Lease, Busacca said an Environmental Impact Statement (EIS) was prepared.

"This process, which is an inherently public one, included meetings with the public and addressed comments from the public and government agencies," Busacca said.

"The EIS did not reveal any significant issues that would affect the original development plans."

The first set of roads leading into the park are paved and marked. Facility infrastructure, including electrical power, street lights, water and sewer, has been completed, moving Phase I development closer to facility construction.

Allison Odyssey, senior program manager with Space Florida, said work is

in progress on landscaping, irrigation and additional signage, and these should be completed by the end of the month.

"The site is now vertical-ready and all development entitlements are in place," Odyssey said. "We hope to announce our first tenant by the end of 2012 and to break ground on Building A in the first quarter of 2013."

Phase I will include nine sustainable, state-of-the-art buildings that will provide 350,000-square-feet of work space. Each building is expected to qualify for the U.S. Green Building Council's Leadership in Environmental and Energy Design, or LEED, certification.

Exploration Park is a flagship Space Florida project supporting the state of Florida's 2020 Vision for economic growth in aerospace and related fields of science and technology.

From R2-D2 to Curiosity: Good fiction to great science

By Steven Sicheloff
Spaceport News

NASA's Curiosity rover is scouring the Martian surface at Gale Crater with drills, cameras and even a laser so it can find out more about the Red Planet. Curiosity carries no people, instead taking all of its readings by remote control and radioing them back to eager scientists on Earth.

It's a story familiar to "Star Wars" fans, thousands of whom gathered in Orlando, Fla., for Celebration VI. For lovers of the galaxy far, far away, the idea of a robotic traveler working diligently far from home is reminiscent of R2-D2's various journeys to Tatooine, Dagobah and Bespin or the Imperial Probe Droid's search around the ice planet Hoth.

"From what I've seen, people being able to steer a robot on Mars from so far away is truly amazing," said Ben Burt, the sound designer

on the "Star Wars" films who gave R2-D2 a voice mix of electronic sounds with human inflections. He also was trained as a scientist, having majored in physics. "I never could have imagined that being the case back 40 years ago when we started on the first 'Star Wars.' At that time, even the R2 on the set could barely move down the hallway."

While Curiosity represents the technological cutting edge for robots landing on other planets, it still lacks the personality and other high-level attributes of the fictional "Star Wars" machines. No worry, say fans of the film franchise. Reality will catch up soon enough.

"I think good science fiction motivates good science," said Brian Pauley, an Ohio fan who dressed as young hero Luke Skywalker for the event. "When you see something, you say, 'I'd like to do that' and you set about doing it,

and then you accomplish it."

If they had the chance to send R2-D2 on a scouting mission to a real planet in the solar system, Mars would still get most of the attention.

"Mars, that's the best bet," said Evan Greenwood, portraying Glen Marek, or Starkiller. "It's probably the only one that will be terraformable at some point. Not nowadays, but it has the best chance. It's the closest to Earth, it's a mini-Earth, so it's the best place for a base. So if an asteroid hits Earth, and if there are people somewhere else, the human race can survive. Until we do that, we're in peril."

A more Hoth-like world also got a vote, though.

"Pluto would probably be the best to send it to because we don't know anything about Pluto," said an Imperial Officer-costumed Jasmine Seale. "It's so far away, it's so hard to figure anything out. So I'd love to send R2-D2 out there where we

can't reach that well."

The most important thing, the fans said, was to keep exploring, and pushing the boundaries of knowledge outward.

"I think we're just scratching the surface," said Tim Martinez, dressed in the menacing black armor of Darth Vader. "I was a big astronaut buff when I was young and Mars has always intrigued me and I think the more that we explore, the more we'll learn and the more there is to explore. Maybe we'll travel there one day."

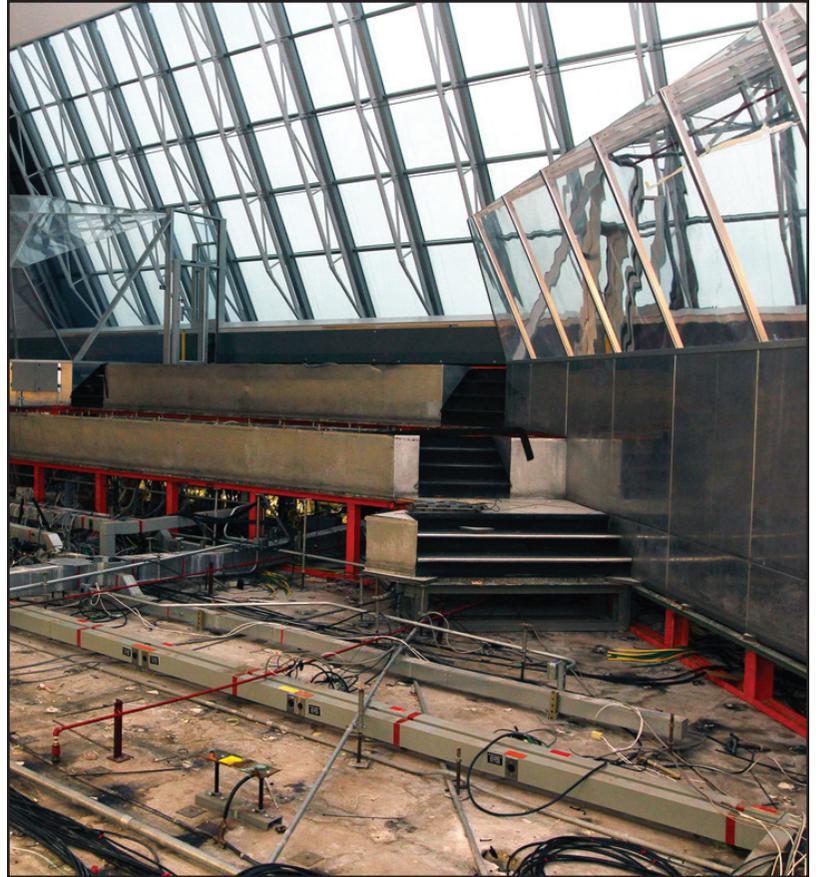
"Every step we take gets us a little bit closer," said David Atteberry, wearing a detailed Mandalorian armor costume similar to Boba Fett's attire, "and that's one of the things I found about the Curiosity rover, it's like we're finally getting out there, back into space and getting closer to that dream of being able to explore our galaxy."

Scenes Around Kennedy Space Center



NASA/Kim Shifflett

Launch Services Program (LSP) Manager Amanda Mitskevich, left, was presented with a framed commemorative collage of five United Launch Alliance (ULA) mission photos in 2011 from Jim Spornick, second from left, vice president of Mission Operations at ULA on Aug. 27 at Kennedy Space Center. Also at the presentation were ULA Program Manager for NASA Missions Vern Thorp and LSP Deputy Program Manager Chuck Dovale.



NASA/Kim Shifflett

Firing Room 3 of the Launch Control Center at Kennedy Space Center is undergoing a major reconstruction as shown here Aug. 27. Space shuttle era consoles have been removed, as well as flooring and cables that had been in place dating back to the Apollo program. For more than 40 years, the firing rooms of the Launch Control Center have served as the "brain" for launches at NASA's Florida Spaceport. Whether an Apollo-Saturn rocket or the space shuttle, the focus was always on one program. Now the firing rooms are being modified to be more generic in nature to support a variety of future launch vehicles.



NASA/Frankie Martin

Lt. Gen. Thomas P. Stafford, former astronaut and Air Force test pilot, stands near the Astrovan and space shuttle Atlantis inside the Vehicle Assembly Building at Kennedy Space Center on Aug. 10. Stafford flew two Gemini missions, commanded Apollo 10 and commanded the Apollo-Soyuz Test Project during his NASA career.



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NASA/Eric Reyier

As part of NASA's Kennedy Space Center's first-ever Innovation Expo, employees had the opportunity to take a tour, called "Living Outdoor Laboratory for Environmental Sustainability," on Sept. 6. Here lemon sharks are shown in the shallow surf. Innovation Expo gave employees the opportunity to see the unique estuarine ecosystems that are protected from development by the presence of Kennedy and the Merritt Island National Wildlife Refuge.

LED lights shine on plant growth experiments

By Linda Herridge
Spaceport News

What kind of food will astronauts eat and what is the best way to grow it during deep space exploration missions? A group of plant biologists is seeking the answers as it works on one of NASA's Advanced Exploration Systems (AES) Habitation Projects at Kennedy Space Center's Space Life Sciences Laboratory.

Gioia Massa, a NASA Postdoctoral Fellow in the Surface Systems group of Kennedy's Engineering Directorate, works on this AES habitation-related project.

For this experiment, Massa said they looked at the responses of a red-leaf lettuce called "Outredgeous" and radish plants to different light sources—broad spectrum fluorescent lighting and solid state red and blue LED lighting.



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NASA/Frank Ochoa-Gonzales

Dr. Matthew Mickens, a plant biologist from North Carolina Agriculture and Technical State University in North Carolina, measures Cherry Bomb Hybrid II radish plants harvested from a plant growth chamber Aug. 3 inside the Space Life Sciences Laboratory at Kennedy Space Center. The plant experiment at Kennedy is part of the Advanced Exploration Systems program in NASA's Human Exploration and Operations Mission Directorate.

"LED lights are efficient and versatile," Massa said. "Because of their durability and long life, they are ideal for space missions where re-supply of things from Earth is limited."

According to Ray Wheeler, lead for advanced life support activities in the Engineering Directorate,

using LED lights to grow plants was an idea that originated with NASA as far back as the late 1980s.

Matthew Mickens, a graduate of North Carolina Agricultural and Technical State University and recipient of the NASA-sponsored Harriett G. Jenkins Predoctoral Fellowship, followed

the plants' growth during his tenure at the center.

During a recent harvest of the plants, Mickens measured the plants' shoot length, shoot diameter, total fresh mass or the weight of the plants at time of harvest, total dry mass of the edible plant matter accumulated during the growth cycle, and the leaf area index.

"One of the objectives of the study was to understand the effects of green light on plant growth," Mickens said.

For the test, he compared the growth responses of the lettuce and radishes grown under a treatment of red and blue LEDs, and a treatment of broad spectrum white fluorescent lamps with green light present.

"I discovered that there were considerable physiological differences between the two treatments," Mickens said.

"Even subtle changes in

light quality can potentially increase antioxidant properties of crops, such as the lettuce used here," Mickens said. "The nutritional quality of the vegetables meant to feed our astronaut explorers can be controlled by proper selection of lighting used to grow these crops during long-range space missions beyond low Earth orbit."

"As we learn more about different light sources we can better configure the lights to more efficiently produce plants that will produce food for the crew, recycle the atmosphere and help to recycle water," Massa said.

"Ultimately, we would like to develop closed-loop bioregenerative technologies that are self-sustaining," Massa said. "Our current supplemental food production system is a step towards this future goal."

High stakes elevate importance of 'Malfunction Junction'

By Steven Sicheloff
Spaceport News

Working side-by-side with designers developing technologies of the future are engineers deciphering what went wrong with some of the technologies of the present.

They analyze readouts from precision tools, devise ways to test large pieces of rocket hardware without damaging the rocket itself, and burn, blow up or vaporize leftover fragments in an effort to find out why something failed.

Think of it as CSI: KSC.

NASA's Kennedy Space Center is home to a failure analysis lab system whose ancestral roots extend back to the 1960s when failures were not uncommon during early days of rocket development.

These days, the stakes are far greater for engineers and designers, and a significant failure on a launch

can ground a rocket fleet for more than a year, let alone an afternoon. One of the first teams called into action is the failure analysts.

"Everyone's looking to you to come up with the answer," said Chad Carl, who leads the Materials and Processes Engineering Section of the Failure Analysis and Materials Evaluation Lab at Kennedy.

Their analyses cover such a wide range of failures of everything from tiny valves in processing equipment to nose cones that the lab is nicknamed "Malfunction Junction."

"It was like solving puzzles all the time," said Rick Rapson, a retired engineer who examined everything from quick-disconnect valves on shuttle components to a propane tank that exploded on a turkey farm in Iowa. "Like a policeman solves crimes by looking at the evidence, you're looking for the piece of the puzzle that caused the event to occur and sometimes you had to look

a long time to find the right piece. But it was pretty rare that you got stumped."

Making the work much harder was the fact that when rockets fail, there isn't often much left to study.

"When something fails, it's usually a long way away and it's not coming back, so we won't get to look at it," said Todd Campbell of NASA's Launch Services Program, which is responsible for sending many of the space agency's flagship missions into space.

The failure analysts and the engineering teams consider themselves a critical element in minimizing the disruption by tracking down what went wrong, finding out if more rockets have the same problem and coming up with a way to fix it.

"If there's something that's supposed to fly and it can't because it has a crack in it or there's some unknown, we're called in to solve the mystery, figure out what happened

and why and what we can do to get flying again," said Bryan Tucker, an engineer in the lab.

Working at the agency's primary launch site means Kennedy's analysis teams work mostly with rockets and ground support equipment, though there are occasional times when the spacecraft also is evaluated to determine its role in a problem.

"At the end of the day, it's all about Earth to space," said Dave Sollberger, deputy chief engineer of NASA's Launch Service Program and the person who determines that a rocket is ready to go from an engineering standpoint. "Our job is not the science of what the satellite does, our job is altitude and velocity to get the spacecraft either to low Earth orbit or on a deep space trajectory."

He depends on his team of engineers and data drawn from stringent evaluations of a rocket's components

See **ANALYST**, Page 8

2012 NASA AWARDS

2011 PRESIDENTIAL RANK AWARD

Meritorious Executive

Susan P. Kroskey
Chief Financial Officer

Tracy L. Wetrich
Director, Human Resources

HONORABLE MENTION

Distinguished Service Medal

David M. Martin
Manager, Launch Vehicle Systems Office, Commercial Crew Program

Philip E. Phillips
Program Manager, Ground Systems Development and Operations Program

HONORABLE MENTION

Distinguished Public Service Medal

James Spornick
United Launch Alliance

Michael L. Young
United Space Alliance

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Alan Alemany
William C. Atkinson
James D. Blake
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Dave W. Burris
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Craig J. Chesko
Adam C. Cooper
Vicki M. Cox
Frances E. Cunningham
Gary M. Felker
Rogelio Franco
Thomas E. Frattin
Ralph Fritsche
Jay E. Green
Greg J. Harrigan
Kari L. Heminger-Sperna
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John Hueckel
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Larry W. Kiel
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Stanley R. Kuhns
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Joseph E. Madden
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Richard D. Nielsen
Jennifer M. Nufer
Gary J. O'Neil
Terry S. Parnell
Jorge L. Piquero
Janice C. Pirkle
Bobbie J. Raymond
Robert Russo
Rosaly J. Santos-Ebaugh
Roland Schlierf
Clyde D. Shreve
James C. Simpson
Susan D. Sitko
Alice F. Smith
Scott P. Stilwell
Phillip L. Swihart
Erik E. Tormoen
Terry S. Turlington
Eugene E. Walker
Christine L. Weaver
Lorene B. Williams
Henry W. Yu

KSC Quality and Safety Achievement Recognition (QASAR) Award

Lifetime Achievement

Humberto "Bert" T. Garrido
KSC Safety and Mission Assurance

Most Significant Quality or Safety Contribution From Within the NASA Safety and Mission Assurance Organization, as a Civil Servant

Todd E. Brandenburg

Most Significant Quality or Safety Contribution External to the NASA Safety and Mission Assurance Organization, as a Civil Servant

Frank J. Merceret
Ground Processing

Most Significant Quality or Safety Contribution From Within the NASA Safety and Mission Assurance Organization, as a Contractor

Joseph B. Hamilton
Millennium Engineering and Integration Co.

Most Significant Quality or Safety Contribution External To The NASA Safety And Mission

Assurance Organization, as a Contractor

E. David Griffin
A.I. Solutions, Inc.

INDIVIDUAL NASA HONOR AWARDS

NASA Outstanding Leadership Medal

Judith C. Blackwell-Thompson
Mark R. Borsi
Hortense B. Burt
Jeremy J. Graeber
Robert B. Holl
Vicki C. Johnston
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Susan P. Kroskey
Karen D. Lucht
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Wayne W. McClellan
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NASA Outstanding Public Leadership Medal

Brian J. Gloade
Ernest G. Tonhauser

NASA Exceptional Service Medal

Tammy L. Annis
Todd C. Arnold
Allard J. Beutel
Andrew C. Bundy
Raoul E. Caimi
Ernesto T. Camacho
Brekke E. Coffman
Scott T. Colloredo
Georgianna B. Cox
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Burton R. Summerfield
Ewing B. Swaney
Joseph Tellado
John M. Vondenhuevel
Raymond M. Wheeler
Scott B. Wilson

NASA Exceptional Public Service Medal

Carole J. Chauncey
Kathy S. Fleming
Steven C. Geis
Robert J. Loomis
Timothy Olinger
Services Contract.

Christina Pobjecky
Jacob D. Rivers
Ivan I. Townsend
Jeffrey Wilt

NASA Exceptional Achievement Medal

Steven Bigos
Joseph A. Dant
Laura C. Gallaher
Krista Y. Jensen
Ellen R. Lamp
Laura M. McDaniel
Roger S. Rudig
Randall E. Scott
Michael B. Stevens
Thomas N. Williams
Nancy P. Zeitlin

NASA Exceptional Public Achievement Medal

Robin Bullock
Tara S. Miller
John M. Phillips

NASA Exceptional Administrative Achievement Medal

Catherine D. Bond
Carole-Sue Feagan

NASA Early Career Achievement Medal

Damara M. Belson
Daniel H. Hull
Victoria S. Long
Kristen P. Luther
Jessica R. Paglialonga
Rommel A. Rubio
Jennifer L. Tharpe
Jennifer G. Wilson

NASA Silver Achievement Medal

Mary MacLaughlin
Scott Vangen

KSC FIRST Sustainability Team
Accepting for the team is Billy McMillan, NASA

NASA
Derek Bailey
Christopher Bershad
Anthony Harris
Raquel Lumpkin
Billy McMillan
Lance Rogers
Brittani Sims

Commercial Crew Program
Partner Integration Team
Accepting for the team is Scott Thurston, NASA

James Burnum
John McKinnie
Gennaro Caliendo

Laura Segarra
Jon Cowart
Misty Snopkowski
Robert Dempsey
Kenneth Tenbusch
Bradley Jones Valin Thom
William Lane
Scott Thurston
Cheryl Malloy
Sarah Waechter
Henry May

BLUE MARBLE AWARD

NASA EMD Director's Environment and Energy Award

Individual
Denise Thaller

Group
Shuttle Program Transition and Retirement Environmental Management Team
Accepted by Francis Kline

Alice F. Smith, NASA
Ann T. Williams, NASA
Amy S. Mangiacapra, United Space Alliance
Dorothy Couch, Bridget BTC Inc.

NASA GROUP ACHIEVEMENT AWARDS

AQUARIUS MISSION INTEGRATION AND LAUNCH TEAM
Accepted by Jorge Piquero, NASA

DUNE VULNERABILITY TEAM
Accepted by Donald J. Dankert, NASA

ELANA III MISSION INTEGRATION AND LAUNCH TEAM
Accepted by William Atkinson, NASA

GRAIL LAUNCH VEHICLE INTEGRATION AND LAUNCH TEAM
Accepted by Bruce Reid, NASA

GDSO MISSION CONCEPT REVIEW TEAM
Accepted by Timothy Honeycutt, NASA

IMCS DIGITAL SYSTEMS TECHNOLOGY TRAINING COMMITTEE
Accepted by Brad Postlethwaite, Abacus Technology

INDUSTRIAL ENGINEERING (IE) NETWORK TEAM
Accepted by Shaqueena Lewis, NASA

INSTITUTIONAL BASELINE REVIEW TEAM
Accepted by Lisa Saunders, NASA

JUNO LAUNCH VEHICLE INTEGRATION AND LAUNCH TEAM
Accepted by John Calvert, NASA

K-12 EDUCATION SUPPORT TEAM
Accepted by Laura Colville, Oklahoma State University

KSC INTEGRATED DISPOSITION TEAM
Accepted by Ewing B. Swaney III, NASA

LUNAR REGOLITH TESTING TEAM
Accepted by Michael W. Csonka
Craig Technologies - ESC

MARS SCIENCE LABORATORY MISSION INTEGRATION TEAM
Accepted by Wanda Harding, NASA

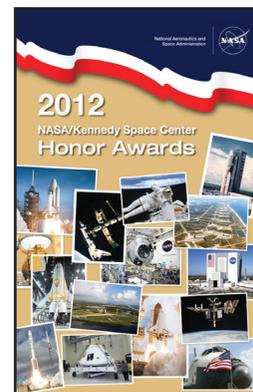
NPP LAUNCH VEHICLE INTEGRATION AND LAUNCH TEAM
Accepted by Bruce Reid, NASA

PAD B EARLY DEPLOY SYSTEMS ENGINEERING TEAM
Accepted by David P. Armstrong, NASA

QUICK ATTACH UMBILICAL TEAM
Accepted by Gabor J. Tamasy
NASA

REIMBURSABLE AGREEMENT PROCESS IMPROVEMENT TEAM
Accepted by Marilyn Davidson, NASA

SUSTAINABILITY PLAN TEAM
Accepted by Denise Thaller, NASA



To view a copy of the program that includes award descriptions and team members' names, click on the photo.

NASA Employees of the Month: September



NASA/Kevin O'Connell

Employees for the month of September are, from left, James Joyner, Safety and Mission Assurance Directorate; Norman Beck, Launch Services Program; Jeffrey Crisafulli, Engineering Directorate; Ken Ford, Ground Processing Directorate; and Richard Quinn, Procurement Office. Not pictured are Melodie Jackson, Ground Systems Development and Operations; and Jeff Johnson, Center Operations.

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and materials to help him feel comfortable that a launcher will perform correctly.

Sometimes a launch does not go well, such as two recent occasions in which payload fairings did not separate correctly from around the spacecraft and the missions were lost.

In the past, Sollberger did not have the Kennedy lab to call on since it spent the vast amount of its time studying space shuttle components. With the shuttle program winding down and then retiring, though, the LSP engineer found a sound source of expertise to help his work.

Before, the LSP engineers farmed testing to outside labs, but that meant the engineers and analysts didn't meet face to face much and the communication back and forth was often very formal, Sollberger said. With this approach, if something comes up the engineers can simply walk over and share a finding or new theory easily.

Much of the work this year has centered on making sure the payload fairing problems did not extend to other rockets and missions. While engineering boards determine a categorical cause for the failure, NASA still has upcoming missions to launch.

Although rocket designs fly dozens and dozens of times successfully, to an engineer certifying that a rocket is ready to safely deliver a cutting-edge spacecraft into orbit, there still are plenty of things that can go wrong on each flight simply because launchers are not reused.

Ground tests routinely are performed on components and engines are test-fired, but on launch day, the rocket carrying a satellite into space is doing something it has never done before.

"On the LSP side, every launch vehicle is brand new," Carl said. "So every single time you are dealing with a set of parts coming together to make a launch vehicle that have never flown before, and essentially it's an all-new vehicle every single time."

Understand, also, that even when they are not thinking about a problem or test result, these engineers still arrive at a solution.

"I've popped awake at 3 o'clock in the morning, bam, there it is, the a-ha moment" Tucker said. "I thought I was peacefully sleeping."

Rapson came up with the cause of the drag chute door popping off the shuttle at launch of STS-95 while driving into work, six weeks after they'd started looking into the issue. It turned out the sheer pins holding the door on were not strong enough for the design. They were strengthened to solve the issue.

"We looked at everything we could think of," Rapson said. "I figured it out driving in. The one piece of the puzzle, it can be a thing where all of a sudden a light comes on."

Long airplane flights also can do the trick.

"I can't tell you how many times I was on a plane and have been working on my laptop, maybe cleaning up email and out of nowhere it just hits you, we need to look at that, that's going to be where the answer is," Carl said.

Looking up and ahead . . .

* All times are Eastern

2012

- Oct. 4 USAF Launch/Cape Canaveral Air Force Station (SLC-37B): Delta 4, GPS 2F-3
Launch window: 8:10 to 8:29 a.m.
- Dec. 6 NASA Launch/Cape Canaveral Air Force Station (SLC-41): Atlas V, Tracking and Data Relay Satellite-K (TDRS-K)
Launch window: 12:29 to 1:09 a.m.

In celebration of Kennedy Space Center's 50th anniversary, enjoy this vintage photo . . .

FROM THE VAULT



NASA file/1961

This 1961 photo shows Dr. William H. Pickering, left, JPL director, presenting a Mariner spacecraft model to President John F. Kennedy. NASA Administrator James Webb is standing behind the Mariner model. Mariner 2 launched 50 years ago on Aug. 27, 1962. The Mariner 2 probe flew by Venus in 1962, sending back data on its atmosphere, mass, and weather patterns. It stopped transmitting in 1963 after delivering a wealth of scientific information.



John F. Kennedy Space Center

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